REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 15-31 are in the case.

I. THE OBVIOUSNESS REJECTION

Claims 15-31 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent 6,048,451 to Huff, Jr. et al. (Huff) That rejection is respectfully traversed.

As claimed in claim 15, a process is provided for increasing the boiling point of organic nitrogen species present within a liquid hydrocarbon feed. The process comprises contacting a liquid hydrocarbon feed comprising an alkylating agent and organic nitrogen species, the liquid hydrocarbon feed being one or more petroleum fractions with a boiling range of 10-450°C selected from catalytically cracked naphtha, coker naphtha and visbroken naphtha, with an acidic catalyst at elevated temperature in a first reaction zone to generate a liquid hydrocarbon feed comprising a reduced alkylating agent content and organic nitrogen species of higher boiling point.

Claim 16 claims a process for removing organic nitrogen compounds from a hydrocarbon feedstock in which, as a first step, a hydrocarbon feedstock comprising an alkylating agent and organic nitrogen compounds is contacted with an acid catalyst at elevated temperature to produce organic nitrogen compounds of higher boiling point.

Huff does not render the presently claimed process unpatentable. Huff describes a process in which organic sulphur species in a hydrocarbon mixture are converted to sulphur species of higher boiling point by contact with an acid catalyst. Huff does not suggest the present process since the Huff process does involve contacting a "liquid

hydrocarbon stream comprising...an organic **nitrogen** species" (emphasis added) with an acidic catalyst, as presently claimed. Huff instead discloses that organic nitrogen compounds, which may also be present in the hydrocarbon mixture, can cause catalyst deactivation and, hence, are **removed prior** to contact with the acidic catalyst in order to prevent damage to the catalyst (see, column 10, lines 54-67). This removal is stated to be achieved by conventional means, such as by using an acid wash or a guard bed positioned in front of the acid catalyst.

In the present process, on the other hand, the liquid hydrocarbon stream to be contacted with the acidic catalyst comprises "organic nitrogen species". By contacting a hydrocarbon feedstock comprising alkylating agent with an acid catalyst at elevated temperature, organic nitrogen species within the hydrocarbon feedstock are converted to organic nitrogen species of increased boiling point. This is **not** suggested by Huff. Indeed, Huff leads away from this approach by disclosing that, since nitrogen-containing organic compounds can react with the acidic catalyst and deactivate it (column 10, lines 48-51), the nitrogen-containing compounds are removed beforehand by another means such as by using an acid wash or a guard bed positioned in front of the acid catalyst.

Thus, one of ordinary skill in the art, based on Huff, would **not** have been motivated to contact nitrogen-containing organic compounds with an acidic catalyst in view of the risk of catalyst deactivation. In light of this, in Huff, organic nitrogen is removed via the acid wash/guard bed treatment **before** contact with the acidic catalyst. In particular, Huff discloses at column 10, lines 54-59 that organic nitrogen species are removed from the feedstock before being contacted with the acid catalyst by using conventional guard bed or acid wash technology. Guard beds and acid wash units are

well known to those skilled in the art and operate by absorption, not by catalysis. This is evidenced by Huff at column 10, lines at 59-65, where regeneration of the guard bed or acid wash is discussed.

At page 4 of the Action, it is asserted that it would have been obvious to modify Huff to remove nitrogen compounds also by fractionation "because any suitable separation technique will be equally effective." This is not correct, because contacting nitrogen containing compounds with the acidic catalyst runs the risk of deactivation of the catalyst which would not be seen by one of ordinary skill as "equally effective". The suggestion in the Action to so modify Huff is clearly based on hindsight in light of the discovery of the present invention, which is not proper basis for rejection.

In summary, Huff leads away from the concept of increasing the boiling point of organic nitrogen species by contact with an acidic catalyst because of problems with catalyst deactivation and, instead, points to removal of nitrogen-containing compounds using guard beds and acid wash units prior to contact with the acidic catalyst . Based on Huff, the person of ordinary skill would understand that the guard bed/acid wash treatment serves to remove organic nitrogen compounds, and does not convert them to other organic nitrogen compounds of higher boiling point.

In light of the above, one of ordinary skill in this art would not have been motivated to arrive at the presently claimed invention based on the Huff disclosure, as there would have been no motivation to contact a liquid hydrocarbon stream comprising organic nitrogen with an acidic catalyst due to the problem of catalyst deactivation. Absent any such motivation, it is clear that a *prima facie* case of obviousness has not

been generated in this case. Reconsideration and withdrawal of the outstanding obviousness rejection are accordingly respectfully requested.

II. CLAIM AMENDMENTS

The claims have been amended to improve their form. The number of claims has not been increased, no new matter is entered, and no new issues are raised. Entry of the claims as amended is accordingly respectfully requested.

Favorable action is awaited.

Respectfully submitted,

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